ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Five year agreement has been made by United States and Great Britain to exchange technical information on gas-cooled nuclear reactors. Agreement was signed on U.S. visit last fortnight of Lord Plowden, chairman of the U.K. Atomic Energy Authority, after recent discussions in London and Washington. The exchange covers development, design and operation of the advanced gas-cooled reactors being built by the British at Windscale, England, and by the U.S. at Oak Ridge National Laboratory. (Other INTERNATIONAL NEWS, p.5 this LETTER.)

Offering of $2,500,000 of 6% convertible subordinated debentures is proposed by Victoreen Instrument Co., Cleveland, in registration statement filed with the Securities and Exchange Commission. The company, manufacturer of instruments including types for specific nuclear applications, intends to use $1,850,000 of the proceeds of the debt issue to retire a bank loan. The balance would be added to the firm's general funds. (Other FINANCIAL NEWS, p.5 this LETTER.)

Glenn T. Seaborg, nuclear scientist and chancellor of the University of California, has been chosen by the USAEC to receive its $50,000 Enrico Fermi Award for 1959. The award to Dr. Seaborg is for the "discovery of plutonium and other transplutonium elements, and for his leadership in scientific and educational affairs". The award had been recommended by the Commission's general advisory committee and approved by the President. (Other NEWS OF PEOPLE, p.2 this LETTER.)

Three 12-million electron volt tandem Van de Graaff machines will be delivered under $3,333,510 USAEC contract received by High Voltage Engineering Corp., Burlington, Mass. The accelerators will be installed at two Commission installations, Argonne National Laboratory, Lemont, Ill., and Oak Ridge National Laboratory, Oak Ridge, Tenn., and at Rice Institute, Houston, Tex., where research in nuclear physics is being conducted under USAEC contract. These tandem machines comprise two 6-Mev Van de Graaff acceleration columns using a common high-voltage terminal. A steel pressure vessel, 8-ft. in diameter and 34-ft. long, encloses the entire unit which weighs more than 35-tons. (Other CONTRACT NEWS, p.2 this LETTER.)

Saxton Nuclear Experimental Corp., Reading, Pa., has applied for USAEC license to build at Pennsylvania Electric Co.'s Saxton Station a 20 mw (thermal) nuclear reactor. Westinghouse Electric will supply the reactor, a light water moderated, pressurized water unit. It will be used for research and development purposes with an existing 10 mw turbine generator to initially produce 5,000 electrical kw. Saxton Corp., set up by General Public Utilities Corp., New York, is owned by four GPU subsidiaries: Pennsylvania Electric Co.; Metropolitan Edison Co., Berks County, Pa.; New Jersey Light and Power Co., Danville; and Jersey Central Power and Light Co., Asbury Park. Public hearing has been scheduled by the USAEC for Dec. 15, 1959 on this application. (Other BUSINESS NEWS, p.5 this LETTER.)

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ATOMIC ENERGY CONTRACT NEWS...

CONTRACTS AWARDED: Navy contract in amount of $3 million has been awarded by Bureau of Ships to Carrier Corp., Syracuse, to produce air cooling apparatus for nuclear power submarines. The machines will operate on the vapor-absorption principle, using reactor-produced steam. Present submarine air conditioning systems have been of the more commonly used compressor type.

Architect engineering design of the nuclear test plant at the National Reactor Testing Station, Arco, Idaho will be done by C. F. Braun & Co., Alhambra, Calif., under recent USAEC contract award. The reactor conceptual design is being performed by Combustion Engineering, Inc., Windsor, Conn. Nuclear design assistance to Braun will be provided by Combustion's subsidiary General Nuclear Engineering Corp. (The nuclear test plant will be a facility to test reactor cores of either pressurized or boiling water environment, and having power capacities up to 60,000 thermal kilowatts. Total estimated cost is about $5 million.)

MEETINGS, CONFERENCES, COURSES...

SYMPOSIA: Symposium on Direct Conversion of Nuclear Energy will be held Mar. 19-20, 1960 under auspices of Pittsburgh section of American Nuclear Society, in Pittsburg. Details may be obtained from G. Weddell, Westinghouse Electric Corp., P.O. Box 1468, Pittsburgh 30, Pa.

Symposia on heavy water production and solvent extraction for uranium and plutonium processing will be given at annual meeting of American Institute of Chemical Engineers, Dec. 6-9, 1959, in San Francisco.

MEETINGS: Tentative program of sessions planned for the 1960 Nuclear Congress, scheduled for April 4-7, New York, will include three environment sessions, two materials and components sessions, four reactor sessions, two aircraft sessions, a session on nuclear standards, and an isotope session. Full details may be obtained from Clarke Williams, chairman of the Nuclear Congress, who may be addressed at Brookhaven National Laboratory, Upton, N.Y.

PEOPLE...

Prof. V. S. Yemelynov, head of the Administration for Utilization of Atomic Energy in the U.S.S.R., and eight colleagues, concluded last week their 15-day tour of major nuclear research centers in the U. S. (Prof. Yemelynov's tour is the prelude to a formal agreement between the U. S. and the U.S.S.R. to cooperate in commercial development of nuclear energy.)

Myron B. Kratzer has been appointed deputy director, division of international affairs, USAEC. He succeeds Clark C. Vogel who resigned to take a position with The Martin Co., Baltimore...Brig. Gen. I. L. Branch has been made assistant director for aircraft reactors, in the USAEC's division of reactor development. He succeeds Maj. Gen. D. J. Keirn who retired in September...John R. Moore has been appointed director of the newly established office of contract policy in the USAEC's Washington headquarters. The new office will develop over-all policies and procedures for Commission contracts.

R. B. Dillaway has been made manager of the Nucleonics sub-division of Rocketdyne division of North American Aviation. The sub-division will handle the company's nuclear rocket activities...R. W. Dickinson has been made director of the sodium reactors department of Atomics International, another North American Aviation division.

Mostafa B. Talaat has joined the nuclear division of The Martin Co., Baltimore, to direct research and development in the field of energy conversion. He will direct programs on the use of heat of decay of radioisotopes to generate electricity by the thermal electric effect, for which Martin holds USAEC contracts.

Erich Pohland has been appointed general manager of the European Company for the Chemical Processing of Irradiated Fuels (EUROCHEMIC). Dr. Pohland had been elected chairman of the board last July. R. Rometsch has been made research director of EUROCHEMIC. Dr. Rometsch was formerly with Ciba, in Basle, Switzerland.

Frederick E. Craver, technical consultant for the atomic products division of General Electric Co., Palo Alto, Calif., has been appointed manager of advanced planning for the division. (The division includes GE's atomic power equipment department, San Jose, Calif.; Hanford atomic products operation, Richland, Wash.; and aircraft nuclear propulsion department, with facilities at Cincinnati, Ohio, and Idaho Falls, Idaho.)

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: New high volume air sampler operates at 100 cu. ft./min., and enables large quantities of air to be sampled. Dusts and aerosols are collected on special filters which can be analyzed to determine concentration of radioactive particles, toxic metals, etc. -- Gelman Instrument Co., Chelsea, Mich.

Rubber compound, Presray Compound No. 1704, is said to resist cracking, gumming, or deterioration when exposed to ionizing radiation. Suggested uses include fabrication of pneumatic seals for nuclear reactors, etc. -- Presray Corp., Pawling, N.Y.

Scintillation detector, Model P-20D, is specifically designed for such applications as gamma spectrometry, gross gamma assay, and alpha and beta counting. Some eleven different detection heads may be used with the main unit...New automatic spectrum analyzing system, the Auto-Step Spectrometer, employs a stepping motor drive which advances the threshold setting in discrete one-volt increments. Used in conjunction with a scaler and data printer, the scaler records the counts at the window, and after the expiration of the present count or preset time, the data printer prints the window number, number of counts, and the elapsed time on a paper tape. -- Tracerlab, Inc., Walth am 54, Mass.

New data readout system, Model 44-7 Add Punch, when used in conjunction with multi-channel analyzer offers punched paper tape and/or standard adding machine tape readouts of stored data, and allows automatic data processing by computer methods. -- Radiation Instrument Development Laboratory, Inc., Chicago 21, Ill.

PRODUCT NEWS: Equipment for the handling and use of very strong radioactive sources, designed and constructed to customers' specifications, is now being offered by Radiation Engineered Services, Norristown, Pa. Included are industrial gamma radiography machines using thulium-170, iridium-192, cesium-137 or cobalt-60; gamma irradiators using cobalt-60 or cesium-137; and special radiation monitoring devices for use in connection with this equipment.

Development of a small mercury vapor driven turbine, with heat to be furnished by a nuclear reactor, was disclosed last week by John A. McCone, USAEC Chairman, at the annual meeting in Washington of the American Rocket Society. The closed system uses liquid sodium as the heat exchanger to vaporize the mercury at about 675 deg. F. The entire system is relatively small. The reactor weighs about 220-lbs.; and the turbine system about 30-lbs. Experimental work to date has used heat source other than nuclear to operate the turbine system which was developed by Thompson Ramo Wooldrige, Inc. The reactor is being manufactured by North American Aviation's Atomics International division. The project bears the title SNAP II (systems for nuclear auxiliary power). SNAP I and II, contract for which is held by The Martin Co., Baltimore, involve use of heat of decay of radioisotopes to generate electricity by the thermal electric effect. The SNAP program is to develop such compact electrical generating devices for space vehicles.

Now in operation at Saluggia, Italy, is the nuclear research reactor designed and constructed by American Machine & Foundry's AMF Atomics division. An industrial training and research reactor, it is operated by SORIN (Societa Ricerche Impianti Nucleari), jointly owned by Fiat and Montecatini. It is a pool type reactor, fueled with 3,238 grams of uranium-235 supplied by the USAEC. With an initial thermal output of one megawatt, it has a potential capacity for future operation at five megawatts.

Oriented graphite in commercial quantities is now being offered by Raytheon Manufacturing Co., Waltham, Mass. Produced in the laboratory for many years in minute quantities, a Raytheon-developed process makes it available in useful quantities and forms. Trade-named Pyrographite, the material is of particular interest for applications in nuclear reactors because of its impermeability to gases. Raytheon people, in experimental tests using a standard mass spectrometer leak detector, did not detect any permeation by helium. They found that it continued to exhibit this property after heating to 2500 deg. C., and re-cooling, in films as thin as 1 or 2 mils.

MANUFACTURERS' LITERATURE: New film badge service sensitive to dosages as low as one milliroentgen, and use of an IBM system to compute data automatically from the exposed film is described in new brochure of Nuclear-Chicago Corp., Des Plaines, Ill...Industrial radiography with radioisotopes, and various radiation monitoring devices, are covered in Bulletin D-1759 of Picker X-Ray Corp., Euclid Ave., Cleveland, Ohio...Beryllium oxide crucibles for melting ultra high purity or reactive metals are covered in a new technical sheet of The Beryllium Corp., Reading, Pa.

ATOMIC ENERGY PATENT DIGEST...

PATENTS ISSUED November 3, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Gamma ray scintillometer. H. R. Brannon, Jr., and J. A. Rickard, inventors. No. 2,911,534 assigned to Jersey Production Research Co., Tulsa, Okla. (2) Apparatus for pulsing a scintillation detector. N. L. Muench, inventor. No. 2,911,535 assigned to Jersey Production Research Co., Tulsa, Okla. (3) Simultaneous neutron and gamma ray well logging system. S. A. Sherbatskoy, inventor. No. 2,911,536 assigned to PGAC Development Co., Houston, Tex.

PATENTS ISSUED November 3, 1959 to GOVERNMENTAL ORGANIZATIONS: (1) Method of recovering plutonium values from aqueous solutions by carrier precipitation. R. A. James, S. G. Thompson, inventors. No. 2,911,282 assigned to USAEC. (2) Process for recovery of uranium values from impure solutions thereof. S. B. Kilner, inventor. No. 2,911,283 assigned to USAEC. (3) Multistage fluidized bed reactor. A. A. Jonke, J. E. A. Graae, N. M. Levitz, inventors. No. 2,911,290 assigned to USAEC. (4) Nuclear reactor control system. E. P. Epler, S. H. Hanauer, L. C. Oakes, inventors. No. 2,911,344 assigned to USAEC. (5) Electron irradiation of solids. A. C. Damask, inventor. No. 2,911,533 assigned to USAEC. (6) Proton resonance monitor. J. G. Bayly, inventor. No. 2,911,587 assigned to USAEC. (7) Variable time delay means. R. C. Clemensen, inventor. No. 2,911,598 assigned to USAEC.

PATENTS ISSUED November 10, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Manufacture of thallium activated alkali metal iodide intensifier screens. H. T. Dybvig, inventor. No. 2,912,589 assigned to General Aniline & Film Corp., New York. (2) Radiation protection device. A. Cervi, M. E. Walter, inventors. No. 2,912,591 assigned to The Radium Emanation Corp., New York.

PATENTS ISSUED November 10, 1959 to GOVERNMENTAL ORGANIZATIONS: (1) Process for separating and recovering constituents of neutron-irradiated uranium. R. E. Connick, J. W. Gofman, G. C. Pimentel, inventors. No. 2,912,302 assigned to USAEC. (2) Dissolution of lanthanum fluoride precipitates. B. A. Fries, inventor. No. 2,912,303 assigned to USAEC. (3) Multichannel analyzer. G. G. Kelley, inventor. No. 2,912,577 assigned to USAEC.

NEW BOOKS & OTHER PUBLICATIONS...

Chemistry of Nuclear Power. J. K. Dawson, senior principal scientist and G. Long, reactor chemistry group, both of A.E.R.E., Harwell, England. Covers established practice, present lines of thought, future problems. 208 pages. -- Philosophical Library, 15 E. 40 St., New York. ($10.50)

L'Industrie Atomique en France et dans Le Monde. Claude Benoit. A general survey. 159 pages. -- Dunod et Cie, Paris, France

Pursuit of the Atom. Werner Braunbek. Translation from the German by B. J. Kenworthy and W. A. Coupe. 242 pages. -- Emerson Books, Inc., 251 W. 19th St., New York. ($3.95)

Report of the National Chemical Laboratory, 1958. Published by the U. K.'s Department of Scientific and Industrial Research, this carefully prepared account covers, among other things, work of the radioisotope applications unit at the A.E.R.E.'s Harwell establishment. Of interest is that some 220 possible applications of radioisotopes are listed. -- H. M. Stationery Office, Cornwall House, London S.E.1, England. (5s 6d)

Nuclear Naval Propulsion; Tankers, Liners (conditions of profitability). R. Gibrat. Translation of paper presented at Nuclear Energy Conference, Milan, Dec. 12-14, 1958. No. AEC-tr-3747 ($1.25)...Pressurized Water Reactor for Production of Process Steam. No. ANL-6009. ($1.50)...Potential Applications of Nuclear Energy in a Marine Environment. Work done at Stanford Research Institute. 216 pages. No. SRIA-7. ($3.50)...Liquid Metal Fuel Reactor Experiment; Quarterly technical report covering period Jan. - Mar. 1959 of work by Babcock & Wilcox. No. BAW-1152 122 pages. ($2.75 ... Gas-Cooled Reactor Project Semiannual Progress Report for period ending June 30, 1959. Report of work at Oak Ridge National Laboratory. No. ORNL-2767. 215 pages. ($3.50)...PM-1 Nuclear Power Plant Program; quarterly process report for period Mar. 9, to May 31, 1959. Work underway at The Martin Co., Baltimore. No. MND-M-1812. 247 pages. ($4.00)...Long Time Ecological Effects of Nuclear War. John N. Wolfe. 5 pages. No. TID-5561. (10¢)...Biological Effects of Nuclear Attack. Gordon M. Dunning. 28 pages. No. TID-5563. (32¢) -- Office of Technical Services, Washington 25, D.C.

ATOMIC ENERGY BUSINESS NEWS...

NEW OUTLOOK FOR CANADIAN URANIUM INDUSTRY: First steps toward mergers and buying up of contracts have been taken in the Canadian uranium industry as result of Canadian government's sanction of such intercompany actions. (The Canadian government had taken this action when it failed to persuade the U.S. to continue buying Canadian uranium concentrate when current contracts expire in 1962 and 1963. U.S. announced last fortnight that its options to continue such purchases would not be taken up.) Under the new Canadian uranium procurement policy, Eldorado Mining & Refining, the government purchasing agency, will receive a master contract from the U.S. and Britain to replace the individual contracts that had been negotiated for each mine. This will then allow an exchange of contracts between firms, since it will no longer require that an individual contract be filled by a particular mine. Instead, those companies with partially fulfilled contracts and unable to continue deliveries because of lack of ore may now sell their contract to a firm with ore reserves in excess of its contract requirements.

An analysis of contract holdings of Canadian mines short of ore to fulfill their original contracts shows that six of the producers have about $270 million worth of uranium concentrates yet to be delivered. These include Lorado, Can-Met, Canadian Dyno, Rayrock, Stanleigh, and Stanrock. Several contract offers are said to have been made to Rayrock which has no reserves and holds unfulfilled contract for $11 million in uranium concentrates. Other firms have also received inquiries. (Further assistance to the companies will be the so-called stretchout plans of the U.S. and U.K., which is now getting about 10% of Canadian uranium concentrates. Under these plans, the U.S. will make an advance payment of $2.50/lb. to Eldorado for each pound of uranium concentrate deferred to the 1962-66 period under current delivery schedules. These advance payments will be made at the same time as if delivery occurred as scheduled. The U.K. plan provides for an additional advance payment of $1.50/lb. on any amount up to 16 million pounds covered by existing contracts which can be deferred into the period Jan. 1, 1965 through Nov. 30, 1966.)

UNITED STATES URANIUM INDUSTRY PROTESTS NEW DEPLETION METHOD: Protests have been made by 23 western senators to Secretary of the Treasury Anderson concerning an impending Treasury Department ruling covering the U.S. uranium industry. Being considered by the Treasury Department is a revision of procedures dealing with ordinary treatment processes which are allowable in determining the gross income from mining of uranium on which percentage depletion is based. This change could cost the industry many millions of dollars. The industry hopes to clarify the Treasury's stand through a series of meetings planned for this fortnight.

ATOMIC ENERGY FINANCIAL NEWS...

CANADIAN URANIUM SHARES REACT TO U.S. OPTION ANNOUNCEMENT: Although prices of Canadian uraium shares had already been discounted to a large extent by investors and speculators, and reflected in the past six months' weakness in their price structure, further depression was caused by the definite announcement last fortnight that the U.S. would not take up its options to buy Canadian uranium concentrates after present contracts expire in 1962 and 1963. Sell offs occurred in almost all issues on the Canadian exchange, as well as among those listed on the U.S. exchanges. An exception was Algom Uranium Mines which announced an initial dividend of $2.50 per share. It will be paid Dec. 1, 1959 to shareholders of record Nov. 21. With 4,344,000 Algom shares issued, this will be a disbursement of $10,861,992. More than half will go to Preston East Dome Mines, which holds 2,826,850 Algom shares. (Up to February, 1959, shareholders paid into Algom almost $16.5 million in exercise of warrants, helping the company repay the whole of its bonded indebtedness which it did April, 1959.)

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

November 24, 1959